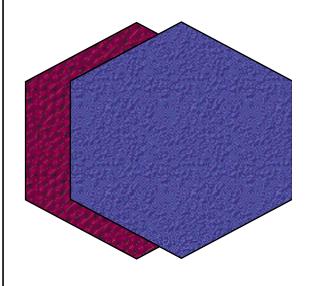


Iowa

CONTENT STANDARDS and BENCHMARKS

Technical and Vocational Education



1999

State of Iowa Department of Education

Grimes State Office Building Des Moines, Iowa 50319-0146

State Board of Education

Corine A. Hadley, President, Newton
Sally J. Frudden, Vice President, Charles City
C. W. Callison, Burlington
Gregory A. Forristall, Macedonia
Gregory D. McClain, Cedar Falls
Mary Jean Montgomery, Spencer
Gene E. Vincent, Carroll
Kay Wagner, Bettendorf
John C. White, Iowa City

Administration

Ted Stilwill, Director and Executive Officer Of the State Board of Education Dwight R. Carlson, Assistant to the Director Gail Sullivan, Chief of Policy and Planning

Division of Community Colleges and Workforce Preparation

Janice Nahra Friedel, Ph.D., Administrator

Bureau of Technical and Vocational Education

Jerda Garey, Ed.D., Chief
Roger Foelske, Administrative Consultant
James Athen, Program Consultant
Betty Bielenberg, Program Consultant
Myril Harrison, Program Consultant
Rosie Hicks, Program Consultant
Colleen Hunt, Program Consultant
Vic Lundy, Program Consultant
Jayne Sullivan, Program Consultant

It is the policy of the Iowa Department of Education not to discriminate on the basis of race, color, national origin, gender, disability, religion, creed, age or marital status in its programs or employment practices. If you have questions or grievances related to this policy please contact Chief, Bureau of Administration and School Improvement Services, Grimes State Office Building, Des Moines, Iowa 50319-0146, (515) 281-5811.

Introduction

HISTORICAL REVIEW

Vocational and technical education historically has met the needs of business and industry through competency-based education grounded upon skills identified as essential in the workplace. Iowa code has identified broad content areas. These areas include:

- Business and Technology
- Marketing
- Agriculture
- Consumer and Family Sciences
- Industrial Technology
- Health Occupations

State legislation passed in 1992 (SF 449) required vocational programs be competency-based and that minimum competencies be identified at the state level. The process for developing competencies is established by sub-rule 281.46.7 (1) in the administrative rules and regulations. Local school districts and community colleges may elect to develop competencies in lieu of the state minimum competencies. A school district is provided the option of utilizing minimum competencies developed through a structured group interview process, involving a technical committee composed of incumbent workers within an occupational cluster of a service area. The law further requires that the competencies be revalidated periodically.

Iowa Code, chapter 258.4 (8) also requires that the program sequence addresses the following: new and emerging technologies, job-seeking, job-keeping, and other employment skills, including self-employment and entrepreneurial skills, that reflect current industry standards, leadership skills, entrepreneurial, and labor-market needs; and the strengthening of basic academic skills.

The Carl D. Perkins Technical and Vocational Act of 1998 requires that programs eligible for federal funds include competency-based instruction, applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills and occupational-specific skills of an individual.

Since the passage of SF 449, another major legislative initiative, HF 2272, has further shaped the model framework. School improvement focuses upon district identified and adopted standards and benchmarks.

A component of the "Iowa State/Federal School-to-Work Plan" is the development of career pathways. Schools receiving the federal STW funds are encouraged to adopt a career pathways model. The STW grant has supported a model developed by the Tech Prep area coordinators and the Iowa Association of Business and Industry has approved the model framework.

In further defining the Career Pathways model, essential employability skills were identified as "Thirteen Essential Skills." (see page vi) These skills were later consolidated into seven standards in a project funded by STW. The broad pathway skills were identified through a DACUM process and refined into standards and benchmarks. The pathways identified include the following: Arts and Communications, Business/Information Management and Marketing, Health Sciences, Family and Human Services, Industrial Technology, and Agriscience & Natural Resources. Employability skills and broad sector career standards are included in the pathways, which form a framework for technical and vocational content standards and benchmarks.

CURRENT STATUS

The revalidation of the technical and vocational and technical content competencies has involved the participation of field with industry, business, and content area professionals. The program management teams from each content area have worked diligently, not only in identifying competencies, but in defining functions and establishing standards and benchmarks, to be consistent with school improvement efforts.

Each content area program management committee has utilized validated state competency statements, reviewed national skills standards and national standards projects during the process of identifying standards and benchmarks. Dedicated individuals from the public and private sectors have provided their expertise for this project. Those members are listed at the end of each content section. Their commitment to a continuous improvement model will ensure that future revisions are timely and will meet business, industry, and community needs.

DEFINITIONS

The following definitions are utilized throughout the document. Sections may also include further clarification and examples.

Foundation—fundamental understandings that can be viewed as co-requisites and as pre-requisites for the content area.

Function—defines the discipline as applied or practiced in the content area field.

Content Standard— broad statements about what students are expected to know and be able to do.

Benchmarks—specific knowledge and skills anchored to content standards that a student needs to accomplish by a specific grade or grade span.

Performance competency—describes the activity utilized to measure performance necessary to reach the benchmark.

CAREER PATHWAYS

A career pathway framework is an organizational structure that identifies a Pre K-12+ broad field of study designed to provide opportunities for a student to prepare for further education and/or entry-level employment and includes the following components:

- Integration of National Career Development guidelines
- Opportunities to integrate academic and occupational instruction supported by school-based and work-based experiential learning
- Horizontal and vertical articulation
- Preparation of the student for future employment in a broad occupational cluster, industry sector, and/or continued education.
- Inclusion of specific occupational preparation which may link two years of secondary education with a two-year or four-year educational institution(Tech Prep model) or an apprenticeship program
- Provision for strong experience in, and understanding of, the career areas of interest to the student
- Introduction of all aspects of the industry

The Career Pathway framework includes the following six pathways:

- 1. Business/information Management/Marketing
- 2. Agriscience/Natural Resources
- 3. Arts and Communications
- 4. Engineering /Industrial/Technological Sciences
- 5. Family and Human Services
- 6. Health Sciences

The Career Pathway framework provides an opportunity to build a vocational program utilizing vocational and technical standards and benchmarks, the career pathway standards and benchmarks, and the employability standards in a sequential organization to meet local district and community needs.

Standards and benchmarks for the occupational cluster knowledge and skills for five of the six pathways are included in this document. Career pathway standards may be accessed through a future AEA 11 website when the final documents are available.

Competencies for Success in Careers and School (13 Essential Skills)

- 1. Communicate and understand ideas and information
 - Listen to and understand work-related messages
 - Write work-related messages
- 2. Collect, analyze and organize information
- 3. Identify and solve problems
- 4. Apply mathematical reasoning to work-related problems
- 5. Understand and work with complex systems
- 6. Use technology
- 7. Initiate and complete entire activity
- 8. Act professionally
- 9. Interact with others
- 10. Learn and teach on an on-going basis
- 11. Take responsibility for career and life choices
- 12. Read and understand work-related materials
- 13. Participate in teamwork

Table of Contents

	Page
Career Pathways (includes Marketing)	2
Curriculum Sequence	3
Curriculum Framework	4
Standards and Benchmarks	5
0 1	
Resources and Links	22
Resources and Links	39
•	
J	
<u> -</u>	
Curriculum Framework	72
Program Management Committee	88
Resources and Links	89
Resources and Links	
	Career Pathways (includes Marketing) Curriculum Sequence Curriculum Framework Standards and Benchmarks Model Program Sequence Business and Technology Program Management Committee Resources and Links Marketing Curriculum Sequence Curriculum Framework Standards and Benchmarks Model Program Sequences Program Management Committee Resources and Links Family and Consumer Sciences Career Pathways Curriculum Sequence Curriculum Framework Standards and Benchmarks Model Program Sequences Program Management Committee Resources and Links Model Program Sequences Program Management Committee Resources and Links Industrial Technology Career Pathways Curriculum Sequence Curriculum Framework Standards and Benchmarks Model Program Sequences Program Management Committee Resources and Links Hodel Program Sequences Program Management Committee Resources and Links Health Occupations Career Pathways Curriculum Framework Standards and Benchmarks Program Management Committee Resources and Links Agriculture Career Pathways Curriculum Framework Standards and Benchmarks Program Management Committee Resources and Links Agriculture Career Pathways Curriculum Framework Standards and Benchmarks Program Management Committee